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| 10/501,844 | 06/10/2005 | Karim Zaghib | 0055676-000020 | 8954 |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/501,844 | Applicant(s) ZAGHIB ET AL. | |
| | Examiner HENRY S. HU | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment of November 12, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 61 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. USPTO has received **Amendment** filed on November 12, 2009, which is in response to non-final action filed on June 15, 2009. **Claims 1-3 and 5 are amended; all non-elected Claims 6-60 are previously cancelled, while new Claim 61 is added.** To be more specific, parent **Claim 1** is amended (fourth time) in **two** ways including: (A) to overcome Examiner's claim objection on the use of component b, particularly to rewrite b1 and b2 for clarification and (B) to relocate the property language on stability voltage.

However, **new claim objections are applied.** The examiner **accepts Applicants' six drawing sheets with Figures 1-7** (a brief description is on page **4**). **Claims 1-5 and 51** with only **one** independent claim (**Claim 1**) are now pending. An action follows.

Response to Argument

2. Applicant's argument filed on November 12, 2009 has been fully considered but they are not persuasive. The focal arguments related to the patentability will be addressed as follows: The amendment by further **rewriting parent Claim 1** in **two** ways including: (A) to overcome Examiner's claim objection on the use of component b, particularly to rewrite b1 and b2 for clarification and (B) to relocate the property language on stability voltage. **The scope for parent Claim 1 is at least somewhat changed.**

However, all three 103 rejections are still sustained with somewhat modified ground of rejection after a close examination. **New claim objections are applied. Final rejection is thereby applied.**

Claim Objections

3. **Claim 1 is objected to** because of the following informalities:

(a) On **Claim 1**-(b), the disclosure for component b with Marquisch language as “selected from the group consisting of SiO₂, Al₂O₃, **nano TiO₂ noncoated, and nano TiO₂ coated with an organic material** that iscopolymer **or with an inorganic material selected from SiO₂ and Al₂O₃**” is improper. Examiner suggests changing to “selected from the group consisting of SiO₂, Al₂O₃, **nano TiO₂ noncoated, nano TiO₂ coated with an organic material** that iscopolymer, **and nano TiO₂ coated with an inorganic material selected from SiO₂ and Al₂O₃**”.

(b) On **Claim 1** at the end, the location for property language on stability voltage is improper. The sentence is better separated from component b and starts with a new paragraph. The sentence may be just moved back to the original location.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The limitation of parent **Claim 1** (amended four times) in present invention relate to *polymer electrolyte for an electrochemical generator, wherein the polymer electrolyte comprises **two** components **a** and **b** as:*

(a) at least one *four branched polymer having a hybrid termination*, wherein at least one branch of said four branched polymer is capable of giving rise to cross-linking; with

(b) at least one component selected from the group consisting of **SiO₂**, **Al₂O₃**, *nano TiO₂* *noncoated*, and *nano TiO₂ coated with an organic material* that is compatible with a tetrafunction terminal acryloyl-modified alkylene oxide polymer, the organic material being selected from at least one *polyol* or at least one *polyethylene-polyoxyethylene copolymer*, *or*

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coated with an inorganic material selected from SiO₂ and Al₂O₃; and wherein the polymer electrolyte exhibits a stability voltage higher than 4 volts.

*See other limitations of dependent **Claims 2-5 and 61.***

6. **Claims 1-5 and 61** are rejected under 35 U.S.C. 103(a) as obvious over **Kono et al. (US 6,399,254 B1 or its equivalent EP 880,189 A2)** or **Ishiko et al. (US 6,190,804 B1 or its equivalent EP 923,147 A2)**, each in view of **Ba Le et al. (US 6,673,273 B2)** and/or **Lan et al. (US 6,596,803 B2)** for the reasons set forth in paragraphs **5-13** of office action dated 10-22-2008, paragraphs **5-8** of office action dated 1-8-2008 and paragraphs **6-11** of office action dated 6-15-2009 as well as the discussion below.

7. **Claims 1-4 and 61** are rejected under 35 U.S.C. 103(a) as obvious over **Kerr et al. (US 7,101,643 B2)** in view of **Ba Le et al. (US 6,673,273 B2)** and/or **Lan et al. (US 6,596,803 B2)** for the reasons set forth in paragraphs **5-13** of office action dated 10-22-2008 and paragraphs **9-11** of office action dated 1-8-2008, paragraphs **6-11** of office action dated 6-15-2009 as well as the discussion below.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as obvious over **Kerr et al. (US 7,101,643 B2)** in view of **Ba Le et al. (US 6,673,273 B2)** and/or **Lan et al. (US 6,596,803 B2)**, and further in view of **Kono et al. (US 6,399,254 B1 or its equivalent EP 880,189 A2)** or **Ishiko et al. (US 6,190,804 B1 or its equivalent EP 923,147 A2)** for the reasons set forth in paragraphs **5-13** of

office action dated 10-22-2008, paragraphs **13-14** of office action dated 1-8-2008 and paragraphs **6-11** of office action dated 6-15-2009 as well as the discussion below.

9. Parent **Claim 1** is now furthermore amended (four times) in **two** ways including: (A) to overcome Examiner's previous claim objection on the use of component b, particularly to rewrite b1 and b2 for clarification and (B) to relocate the property language on stability voltage. **The scope for parent Claim 1 is at least somewhat changed.** Applicants are reminded making corrections so as to overcome above-mentioned two new claim objections.

10. In summary, **component (b) is now used together with the four-branched polymer (the component (a)).** To be specific, component b is now amended to be at least one subcomponent **selected from the group consisting of SiO₂, Al₂O₃, nano TiO₂ noncoated, nano TiO₂ coated with an organic material** that iscopolymer, **and nano TiO₂ coated with an inorganic material selected from SiO₂ and Al₂O₃.** Examiner understands that Marquch language is now applied. **Said organic material** to be coated on nano TiO₂ is compatible with a tetrafunction terminal acryloyl-modified alkylene oxide polymer, while said organic material is selected from at least one **polyol** or at least one **polyethylene-polyoxyethylene copolymer**

11. In view of using at least one newly setting subcomponent in component b to be together with component a such as four branched polymer having a hybrid termination, **three** primary

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references including **Kono, Ishiko and Kerr** in combination or alone is thereby “only” silent about incorporating the claimed additive such as “at least one” from the newly setting components b. In a very close examination, **Ba Le and Lan** in combination or alone has already taught such a subject matter.

12. For instance, see **Ba Le** at column 12, line 12-67; particularly see lines 37-42 for adding inorganic oxide particles derived from silicon, aluminum or titanium in making electrolyte compositions. See **Lan** at column 10, line 27 – column 12, line 6; particularly see line column 10, line 27-31 and column 11, line 20 and 65 for adding **inorganic oxide particles derived from silicon or the like** so as to be mixed with polymers. By doing so, the resulted electrolyte composition or polymer composition mixture becomes more mechanical strength and the like as known in the art. See **Le** at column 12, line 12-16; see **Lan** at column 10, line 27-41. It is noted that **such inorganic oxide particles derived from silicon, aluminum or titanium** (used by **Le** and/or **Lan**) are indeed reading on the currently amended component b.

13. In light of the fact that all involving references are dealing with making polymer/filler mixture by carrying fundamentally the same or similar two components including component (a) and component (b), one having ordinary skill in the art would have therefore found it obvious to modify **Kono, Ishiko or Kerr**’s process of making such a composition by adding or replacing filler with the same or at least similar filler as taught by **Ba Le and Lan**. One would expect all the embodiments in the same genus (filler) would succeed based on functional equivalence and

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interchangeability. Additionally, more diversified and effective polymer electrolyte products may be obtained. .

14. Newly added dependent **Claim 61** is only related to the claimed stability voltage being higher than 4.5 volts. It is thereby rejected with the same rationale for the rejection of parent Claim 1.

15. Applicants' arguments on pages **6-8** of Remarks as "the references even in combination cannot show the polymer electrolyte exhibiting **a stability voltage higher than 4 volts**" are not persuasive enough. Attention is directed to **three** facts including: (A) parent Claim 1 does not specify at all on the weight amount **ratio** between component a and component b, (B) open language "**comprising**" is still applied to the composition of polymer electrolyte in parent Claim 1, and (C) parent Claim 1 does not present how component a and component b are mixed, compounded or blended.

16. Therefore, "**at least in some**" of the references' **many cases and/or working examples, such a stability voltage may have been indeed achieved.** Accordingly, 103 rejections are thereby sustained. **Final rejection is thereby applied** with current situation. New claim objections are applied. Further amendment on parent Claim 1 is suggested.

Conclusion

17. Applicant's amendment **necessitated the new ground(s) of rejection presented in this Office action**. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the

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organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/
Primary Examiner, Art Unit 1796

/Henry S. Hu/
Examiner, Art Unit 1796

February 12, 2010